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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SLOAN, NATHAN A

ART UNIT PAPER NUMBER

2614

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/484,610

Applicant(s)

ROECK ET AL.

Examiner

Nathan A Sloan

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-15, 32-35, 37, 40 and 42 is/are allowed.
- 6) ☒ Claim(s) 1-10, 16-31, 36, 38, 39 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's arguments with respect to claims 1-42 have been considered but are moot in view of the new ground(s) of rejection, as necessitated by the amendment filed 1/20/04.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6, 9-10, 16-17, 19, 21-25, 27-28, 31, 36, 38, 39, 41 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Quigley et al. (2001/0055319).

With respect to claims 1, 2, 4, 16, 17, 19, 27, 28, 36, 39, and 41, the claimed method of adjust the power of a cable modem on a cable network is taught by Quigley et al. (20021/0055319). Quigley teaches using a ranging process over the cable network to set cable modem power (abstract, paragraph 198-199). This process involves “determining that cable modem signals received at or proximate a head-end of the cable network fluctuate in power by more than a defined amount” as taught in paragraphs 324 and 327. A plurality of recent power measurements are used to determine an appropriate power adjustment (paragraphs 131-132 and 338). These measurements are taken at the head end 1012 of Fig. 2, which contains a CMTS as seen in Fig. 2 at 1042, which contains burst receiver 292 (paragraph 216), which is used for the

Art Unit: 2614

ranging process (paragraph 245-247). The head-end then instructs the cable modem to adjust its power based on the calculated adjustment (paragraphs 198-199, 335-339). See also paragraphs 271-274 and 485.

With respect to claim 3, the claimed taking of measurements “by an amplitude estimator in a CMTS” is seen in Fig. 10 at item 585.

With respect to claims 6, 9, 21, 31 the claimed determining more than a defined amount comprising “determining that the cable modem has been instructed to change its power level more than a threshold percentage of opportunities for adjustment” and calculating the power adjustment comprising “determining an adjustment associated with a signal to noise ratio detected” is met as seen in Fig. 32 at item 709. The number of packets corrected to obtain a target SNR are stored and compared to a threshold number of adjustments allowed to determine if a new channel should be utilized (see also paragraphs 321 and 324-327).

With respect to claims 10 and 22, Quigley teaches adjusting power levels by sending a message from a CMTS to cable modem and using well known DOCSIS standards in paragraph 435.

With respect to claim 23, the claimed determining if signals “contain more than a threshold level of noise” is taught in paragraphs 324-327.

With respect to claims 24, 25, the ranging process described above in response to claim 1 may be performed at the CMTS by calculating and adjusting frequencies based on a plurality of frequency measurements as taught in paragraphs 15, 198-199, 342, 353-357, 362, and 462-463.

With respect to claim 38, instruction to change a frequency may be performed as taught in paragraphs 15, 485, 557 and seen in Fig. 31.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5, 7, 8, 20, 26, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (2001/0055319).

With respect to claims 5, 7, and 29, Quigley teaches averaging a plurality of power measurements as noted above (paragraphs 271-274 and 338), but not explicitly using eight or sixteen measurements. It would have been obvious to chose a number such as 8 or 16 sample in order to provide a complete sample that adequately reflects the state of power transmission and compensate for short term fluctuations (paragraph 338).

With respect to claims 8, 20, and 30, Quigley does not explicitly teach that “calculating the power adjustment comprises offsetting the average difference *by a multiple of the deviation* in actual power measurements.” Examiner takes Official Notice that a variety of statistical analysis methods, such as offsetting a mean by a multiple of the deviation are notoriously well known in the art. It would have been obvious for one skilled in the art at the time of the invention to modify the power adjustment methods as taught by Quigley by analyzing a number of power levels with various statistical analysis to determine a power adjustment in order to form a complete data set capable of compensating for short term fluctuations (paragraph 338).

With respect to claim 26, Quigley does not explicitly teach at least eight frequency measurements. It would have been obvious to chose a number such as 8 or 16 sample in order to

Art Unit: 2614

provide a complete sample that adequately reflects the state of power transmission and compensate for short term fluctuations (paragraph 338).

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (2001/0055319) in view of Leano (6,453,472).

With respect to claim 18, the claimed receiver being hardware is met as noted above and the claimed “means for calculating and generating are implemented as software” is not explicitly taught by Quigley. Leano teaches program instructions in a computer readable medium in col. 5:49+ through col. 6:50 for adjusting a cable modem power level based on threshold comparisons. It would have been obvious for one skilled in the art at the time of the invention to modify Quigley by utilizing control software as taught by Leano in order to provide a low-cost solution that is easily upgradeable.

Allowable Subject Matter

4. Claims 11-15, 32-35, 37, 40, and 42 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, does not teach or fairly suggest a method of controlling upstream power of a cable modem using a ranging protocol with a first technique to adjust cable modem power that does not average recent power measurements, determining that signals contain more than a threshold of noise or fluctuation, and using a second technique that averages recent cable modem power measurements to calculate an adjustment.

The closest art of record, the Quigley (2001/0055319) reference teaches optionally averaging a plurality of channel power measurements to compensate for short-term fluctuations

Art Unit: 2614

in paragraph 338. However, there is no teaching or suggesting of using a first technique without averaging, detecting excess noise or fluctuation, and switching to use a second technique with averaging. The next closest art of record, Leano (6,453,472), teaches using a first technique without averaging but is silent on switching to a second technique upon determination of excess noise or fluctuation. There is no teaching or suggestion to combine these teachings and switch techniques based upon a detection of excess noise or fluctuation.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A Sloan whose telephone number is (703) 305-8143. The examiner can normally be reached on Mon-Fri 7:30am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703)305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NAS


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